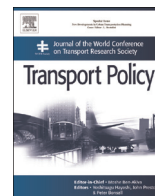Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

The impact of government failure on tourism in the Philippines

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ABSTRACT

While the Philippines aspires to be one of the top tourist destinations in Southeast Asia, self-inflicted wounds like the failure of the government to comply with international aviation safety standards may derail the country from achieving its goals. This article estimates the short- and long-term impact of the US FAA downgrade of the Philippine civil aviation system in 2008 and the EU ban of Philippine carriers in 2010 on tourist expenditures, arrivals, and length of stay using monthly time series data. The econometric model, consisting of three equations due to the endogeneity of the tourist arrivals and length of stay variables in the tourist expenditures equation, is estimated simultaneously using the generalized method of moments. The results indicate that the US FAA downgrade and the EU ban impact monthly tourist receipts negatively in the short term while the downgrade also impacts tourist expenditures in the long term. Moreover, the ban impacts length of stay negatively in the short and long term while the downgrade impacts length of stay negatively only in the long term. The substantial decline in tourism receipts from 2008 to 2010 despite an increasing trend in tourist arrivals is due to the shorter stay of tourists, indicating that high-spending tourists have not returned following the downgrade and ban.

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1. Introduction

The tourism industry requires diligent and deliberate public policy attention as well as an implementation strategy for realizing sustainable economic benefits to a country. For an archipelagic country such as the Philippines that is blessed with beautiful, world-class beaches and coastal resources, tourism is vital to its overall socioeconomic development plan. Considered as part of a country's export industry—with importers as tourists visiting the country—tourism has the potential to unlock innumerable economic opportunities for a country: from increased foreign currency receipts to the generation of jobs from allied industries such as the hotel, entertainment, transportation, and food industries. Much of this promise though hangs on how government is able to address the safety and security issues of its civil aviation system, such as airports and airlines, which tourists and business travelers consider important.

Other than the expectations of tourists, however, airlines are as demanding in terms of security and safety of the civil aviation system, being equally responsible of how tourists and business travelers are brought from their country of origin to their destinations. The threat of hijacking, drug trafficking, and bomb scare in

airplanes and airports are all very real for the air transport industry, especially after the September 11, 2001 terror attacks in the United States (US). In order to prevent these incidents, governments—on their own and in the interest of making air travel safer and more secure, have made investments to improve the security infrastructure and management of their civil aviation system. To verify whether improvements in the civil aviation safety standards are tenable and compliant with mutually-agreed civil aviation safety and security standards, the US Federal Aviation Administration (FAA) has taken on the role as verifier and arbiter of air transport safety standards and airport security outside the US, especially in countries and airports that service US airlines as well as those that service non-US airlines with flights to the US.

The objective of this paper is to examine whether the Philippine government's failure to comply with international aviation safety standards and the consequent downgrade by the US FAA of the Philippine civil aviation system from Category 1 to Category 2 in January 2008 and the European Union (EU) ban of Philippine carriers from European countries in April 2010 have had an impact on tourism demand in the Philippines, expressed as tourist expenditures (receipts), arrivals, and length of stay. A set of equations estimates the impact of the FAA downgrade and EU ban on tourist expenditures, arrivals, and length of stay in the short term while another set estimates the impact of the downgrade and ban on tourism demand in the long term.

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2. Literature review

Economic impact studies on global tourism has mainly focused on terrorist attacks, outbreak of contagious diseases, armed conflicts and wars, and environmental disasters, either by natural calamities or by human negligence or accidents (e.g., oil spills, flooding and landslide caused by deforestation, mining activities that give rise to sinkholes, nuclear plant disasters) and how these events cause sudden shocks in the tourist arrivals and expenditures (Ahlfeldt et al., 2009; Araña and Leon, 2008; Chang et al., 2009, 2011; Daniel and Rodrigues, 2012; Porter, 2011). Shocks to consumer confidence such as economic and financial crises and high unemployment rates in countries where most tourists to the Philippines originate may complicate the impact of the US FAA downgrade and EU ban on tourism demand although Gounopoulos et al. (2012) argue that macroeconomic shocks on the consumer confidence in tourists' origin countries do not have a significant impact on tourism demand. Government failure as the source of negative impact on a country's tourism industry has yet to be explored and examined inasmuch as poorly designed and executed policies can cause deleterious effects to a country and to its tourism and related industries as a whole.

In the case of terrorist attacks Smyth et al. (2009) investigate whether or not such shocks have a temporary or permanent impact on tourist arrivals. Accounting for the Bali bombings in 2002 and 2005, Smyth et al.'s study reveals that tourist arrivals reverted to "pre-terrorist attack" levels and even fared better after some years, indicating that the effects of the shocks or terrorist attacks are short-lived and the resiliency of Bali's tourism industry. Narayan (2005) reports a similar case in Fiji where the negative shocks of coups in 1987 and 2000 only had a temporary effect on tourist expenditures while Kraipornsak (2011) argues that that negative shocks are insignificant compared with income elasticity or real personal income factor in explaining tourist arrivals in Thailand. These results corroborate the transitory impact of shocks, i.e., terrorism and political instability, on tourism demand in Israel and Egypt (Aly and Strazicich, 2000).

The languishing number of tourist arrivals in the US, which in 2006, has yet to reach pre-9/11 tourist arrival levels, may be attributed to its strict visa requirements and entry procedures after 9/11, making the impression that the US is unfriendly to tourists, as well as the opposite policy and attitude of many countries such as Singapore, China and the EU, which eased their inbound travel restrictions to promote international travel to their countries (Edmonds and Mak, 2006). While we do not consider the inability of the US in attracting more tourists as a case of government failure, Edmonds and Mak argue that the US would need better infrastructure in the processing of visas.

Hence, this study builds on the idea of government failure as a "shock" that negatively impacts the tourism industry. Winston (2006) defines "government failure" as the inability of government to intervene in an event or situation of market failure, thereby, creating inefficiencies and reducing economic welfare. Dolfsma (2011) elaborates on government failure by classifying how government issues rules which can be too specific, too broad, arbitrary, and in conflict with other rules that it has set out to address related issues.

We argue that government failure negatively impacts the tourism industry of the destination country and that its impact is comparable with the impact natural and environmental disasters, terrorism, contagious diseases, and war and conflict have on the tourism industry. The two external policy shocks, which resulted from the Philippine government's failure to comply with international civil aviation safety standards, originate from the policy decision of the FAA when the agency downgraded the Philippine civil aviation system to Category 2, and the EU, when its governing council banned Philippine carriers from its airspace. Without a coordinated response from the destination country, the external policy shocks translate into a government failure, affecting tourism demand in the destination country. The impact of external policy shocks on the tourism industry, however, has received little attention in the literature. This article seeks to improve our understanding of the impact external policy decisions have on the tourism industry of another country by examining the impact of the FAA downgrade and EU ban on tourist expenditures, arrivals, and length of stay using Philippine data.

2.1. Determinants of tourism demand

Tourist confidence, global economic growth, level of income, relative prices of goods and services among competing destinations, relative exchange rates between the country of origin and destination, and transportation costs are the major determinants of tourism demand (Chan et al.; 2005; Lim, 1997), although "income is the most important driver of tourism demand, followed by price drivers such as the exchange rate and airfares" (Tourism Research Australia, 2011). The GDP per capita of the Organisation for Economic Co-operation and Development (OECD) member countries has a positive and significant impact on tourism demand in Izmir, Turkey while a stronger Turkish lira, using relative exchange rates against major currencies, has a negative and significant impact on tourist arrivals (Özlem Önder et al., 2009). Moreover, the GDP of the country of origin significantly and positively affects tourist arrivals to the Philippines while relative consumer price indices (CPIs) between the Philippines and the country of origin are insignificant (Deluna and Jeon, 2014). Bronner and de Hoog (2012) argue that during an economic crisis some tourists tend to economize on certain "aspects of a holiday" rather than "giving up a holiday" altogether, indicating that there are limits to the impact of income on tourism demand.

A decrease in tourist arrivals may not necessarily result in a proportional decrease in tourist expenditures and tourist arrivals and receipts "may go in opposite direction[s]" (Campos-Soria et al., 2014). The day of the week (e.g., weekdays, weekends, and long weekends) as well as the time of the year (e.g., winter, spring, summer, autumn, and long holidays) significantly impact tourism expenditures and summer holidaymakers tend to spend more (Brida and Scuderi, 2012). The most significant variable in explaining tourist expenditures in the Republic of Korea is income, followed by the relative prices of tourism-related goods and services and relative exchange rates, while the 1988 Seoul Olympics and the 1990 oil price shock due to the Iraq–Kuwait War are insignificant (Choong-Ki et al., 1996). Length of stay, measured as "[t]he number of nights spent at tourist accommodations" (Lim, 1997) has a positive impact on tourist expenditures, while younger tourists and those with "negative opinions about their holiday experience" tend to spend less on their vacations (Aguiló Perez and Juaneda Sampol, 2000).

The overall image (e.g., association with nature and the natural environment, climate and weather, unspoiled cultural heritage and remoteness) and reputation tend to increase length of stay while resort quality and price as well as the availability of tour packages and flights are insignificant in predicting length of stay in the Azores (Gomes de Menezes et al., 2008). Moreover, social factors (e.g., personal and family characteristics of tourists) and economic variables (e.g., personal and family budget for travel and leisure, personal and family income, and prices of tourism destinations) as well as multiple-destination itineraries tend to result in longer length of stay (Artal Tur et al., 2008; de Oliveira Santos et al., 2014) while the income of tourists is significant in predicting length of stay specifically for low-cost tourism destinations where tourist price decisions are highly elastic (Martinez-Garcia and Raya, 2008).

Given the definition of government failure in the previous section as well as the attendant issues of international tourism demand, the FAA downgrade and the EU ban point to a clear case of government failure in the arbitrary non-compliance of the Civil Aviation Authority of the Philippines with mutually agreed aviation safety standards. We consider both events as sudden shocks and we estimate their impact on tourism demand, consisting of tourist expenditures, arrivals, and length of stay, in the Philippines.

3. Empirical framework

We examine the impact of the FAA downgrade and EU ban on three outcomes: tourism receipts, tourist arrivals, and tourist length of stay. We argue that the downgrade and ban negatively impact tourism receipts, arrivals, and length of stay, at least in the short term, and test their impact on the tourism industry using two sets of equations. One set of equations tests the impact of these shocks in the short term while the other tests their long-term impact.

The equations for the short-term impact of the FAA downgrade and EU ban on tourism receipts, arrivals, and length of stay are specified as:

Short-term impact system of equations

$$
\begin{aligned}
\text{RECEIPTS}(t) = {} & \beta_0 + \beta_1 \text{FAA SHORT} - \text{TERM}(t) + \beta_2 \text{EU BAN SHORT} \\
& - \text{TERM}(t) + \beta_3 \text{TOURISTS}(t) + \beta_4 \text{STAY}(t) \\
& + \beta_5 \text{INTERNAL}(t) + \beta_6 \text{EXTERNAL}(t) + \varepsilon
\end{aligned}
\tag{1}
$$

where for each month t,

RECEIPTS	Total expenditures, in million United States dollars (USD), of foreign visitors.
FAA SHORT-TERM	Dummy variable representing the FAA downgrade, which assumes a value of '0' from January 2000 to December 2007, '1' from January to December 2008, and '0' from January 2009 to December 2012.
EU BAN SHORT-TERM	Dummy variable representing the EU ban, which assumes a value of '0' from January 2000 to March 2010, '1' from April 2010 to March 2011, and '0' from April 2011 to December 2012.
TOURISTS	Total number of foreign visitors.
STAY	Average number of nights foreign visitors stay in the country.
INTERNAL	Dummy variable representing domestic events such as terrorism, political turmoil, and natural disasters that may deter tourists from visiting the Philippines.
EXTERNAL	Dummy variable representing international events such as earthquakes, volcanic eruptions, terrorist attacks, and economic crises that impact international tourism.
ε	Error term.

The 'tourism receipts' variable includes the expenditures of foreign visitors on business and leisure trips as well as ethnic Filipinos that are citizens of other countries who enter the Philippines with foreign passports. The 'tourists' variable includes all foreign visitors as well as ethnic Filipinos who enter the country with foreign passports. The 'stay' variable measures the number of nights that visitors and ethnic Filipinos who use foreign passports spend at tourist accommodations such as hotels and resorts. The

'internal' variable represents domestic events such as the May 2001 kidnaping of tourists at the high-end Dos Palmas Resort in Palawan, the July 2003 Oakwood military mutiny in Metro Manila, the February 2004 Super Ferry bombing, the super typhoon Reming (international name Durian) that buried villages in the Bicol Region resulting in extensive loss of life, and other events that may discourage foreign visitors from traveling to the Philippines. The 'external' variable refers to international events such as the severe acute respiratory syndrome in Hong Kong in 2002 and 2003, the Bali bombings in October 2002, the December 2004 earthquake and tsunami, the July 2005 floods in Mumbai, the August 2005 Hurricane Katrina, the May 2006 Yogyakarta earthquake, the September 2006 coup d'état in Thailand, and other events that may impact international tourism.

$$
\begin{aligned}
\text{TOURISTS}(t) = {} & \beta_0 + \beta_1 \text{FAA SHORT} - \text{TERM}(t) + \beta_2 \\
& \text{EU BAN SHORT} - \text{TERM}(t) + \beta_3 \text{PHPSGD}(t) + \beta_4 \\
& \text{OECD GDP}(t) + \beta_5 \text{INTERNAL}(t) + \beta_6 \text{EXTERNAL}(t) \\
& + \varepsilon
\end{aligned}
\tag{2}
$$

Where for each month t,

PHPSGD	Singapore dollar official exchange rate in terms of Philippine pesos (PHP), which is a proxy for the price competitiveness of tourism-related goods and services in the Philippines relative to its neighbors in Southeast Asia
OECD	GDP growth rate of OECD member countries, which represents the economic growth of relatively wealthy countries

The other variables are as defined in the Eq. (1).

The Singapore dollar (SGD) is arguably the most traded currency among the national currencies of the Association of Southeast Asian Nations (ASEAN). We used the real exchange rate between the SGD and the Philippine peso (PHP) as proxy for the price competitiveness of tourism-related goods and services in the Philippines since the country competes with its neighbors for tourists and their expenditures. While the literature supports the use of CPIs as proxy for the price of goods and services that foreign visitors purchase, relative CPIs between the Philippines and the countries of origin of tourists are not significant in predicting international tourism to the Philippines (Deluna and Jeon, 2014). Moreover, CPIs cannot be used as proxy for the price competitiveness of tourism-related purchases in the Philippines because the government measures CPIs as "changes in the price level of goods and services that most [Filipino households purchase] for their day-to-day consumption" (Sta. Ana and Varona, 2004). Since international tourism and tourism-related purchases are considered luxury items (Park et al., 2011), there is hardly any meaningful association between the tourist price index (TPI), which is not available, and what most Filipino households purchase for their daily consumption. Moreover, Lim (1997) reports that a number of "researchers argue that tourists respond to exchange rate movements when they make their decision to travel, because of limited knowledge" on local prices and the prices of competing goods and services. Thus, the real exchange rate is a better proxy for the TPI as well as the price competitiveness of goods and services that tourists purchase in the Philippines and in competing destination countries.

The increase in disposable income and its attendant lifestyle changes due to economic prosperity, not only in OECD member countries but also in emerging markets, invariably result in higher

international tourism (Chan et al., 2005). Income is the most frequently used explanatory variable for tourism demand (Lim, 1997) and is one of the most significant determinants of tourism expenditures (Choong-Ki et al., 1996). We use the GDP growth rate of OECD countries as proxy for the income variable because OECD member countries are the usual origin of international tourists to the Philippines, including ethnic Filipinos who enter the country with foreign passports.

$$\text{STAY}(t) = \beta_0 + \beta_1 \text{ FAA SHORT} - \text{TERM}(t) + \beta_2$$
$$\text{EU BAN SHORT} - \text{TERM}(t) +$$
$$\beta_3 \text{OECD GDP}(t) + \beta_4 \text{ DAILY EXPENSES}(t)$$
$$+ \beta_5 \text{ INTERNAL}(t) +$$
$$\beta_6 \text{ EXTERNAL}(t) + \varepsilon \tag{3}$$

The 'daily expenses' variable is a proxy to the expected average cost of stay per day in the Philippines on a particular month of the year, measured as the monthly tourism receipts divided by the number of foreign visitors for a particular month, regardless of country of origin.

The other variables are as defined in Eqs. (1) and (2).

The FAA downgrade of the Philippine civil aviation system and the EU ban of Philippine carriers from EU skies should impact tourism receipts, arrivals, and length of stay negatively in the short term. There are limits to the short-term impact of the downgrade and ban, however, and this has to do with the sizeable number of ethnic Filipinos who live in other countries and have foreign citizenships. Ethnic Filipinos who enter the country with foreign passports are counted as international visitors and they travel between the Philippines and their adopted country regularly oblivious of the downgrade and ban that cast doubt on the safety of airline travel in the Philippines. Moreover, international visitors to the Philippines, including ethnic Filipinos, may take non-Philippine carriers to the country should they decide to avoid Philippine carriers and reduce their exposure to the "unsafe" civil aviation system. As the number of international gateways to the Philippines increase, more visitors may be able to avoid taking local airlines to reach their destinations, reducing the negative impact of the downgrade and ban on international tourism to the country.

Tourism receipts should increase with tourist arrivals and longer stays in the country, while the economic growth of OECD member countries, a proxy for income, should result in more tourists since higher disposable incomes tend to increase international tourism demand. If rising incomes shift international tourism demand to more expensive destinations, however, economic prosperity in OECD member countries may result in lower

tourist expenditures, arrivals, and length of stay in the Philippines. The real exchange rate variable, PHPSGD, a proxy for the TPI, impacts tourist expenditures, arrivals, and length of stay in two ways. A stronger SGD against the PHP should result in higher tourism demand since the relative prices of tourism-related activities in the Philippines have decreased, encouraging more travel to and tourism activities in the country. A weaker SGD, making travel to and tourism-related activities in the Philippines relatively pricier for most visitors, should impact tourism demand negatively.

The equations for the long-term impact of the FAA downgrade and EU ban on tourism receipts, arrivals, and length of stay are specified as:

Long-term impact system of equations

$$\text{RECEIPTS}(t) = \beta_0 + \beta_1 \text{ FAA LONG} - \text{TERM}(t) + \beta_2$$
$$\text{EU BAN LONG} - \text{TERM}(t) +$$
$$\beta_3 \text{ TOURISTS}(t) + \beta_4 \text{ STAY}(t) + \beta_5 \text{ EXTERNAL}(t) + \varepsilon \tag{4}$$

where for each month t,

FAA LONG-TERM	Dummy variable representing the FAA downgrade, which assumes a value of '0' from January 2000 to December 2007 and '1' from January 2008 to December 2012
EU BAN LONG-TERM	Dummy variable representing the EU ban, which assumes a value of '0' from January 2000 to March 2010 and '1' from April 2010 to December 2012

The other variables are as defined in the Eq. (1).

We excluded the 'internal' variable from all three equations of the long-term impact system of equations because the variable is highly correlated with the variables of interest, the FAA downgrade and EU ban, resulting in multicollinearity.

$$\text{TOURISTS}(t) = \beta_0 + \beta_1 \text{ FAA LONG} - \text{TERM}(t) + \beta_2$$
$$\text{EU BAN LONG} - \text{TERM}(t) +$$
$$\beta_3 \text{ PHPSGD}(t) + \beta_4 \text{OECD GDP}(t) + \beta_5 \text{ EXTERNAL}(t) + \varepsilon \tag{5}$$

All variables are as defined in Eqs. (1), (2), and (4).

While we expect that the FAA downgrade and EU ban have a short-term negative impact on tourism demand (receipts, arrivals, and length of stay) in the Philippines, the downgrade and ban may not have a negative impact in the long run if there are no major airline accidents in the country in the years following the downgrade and ban. If there are major accidents in the Philippine air
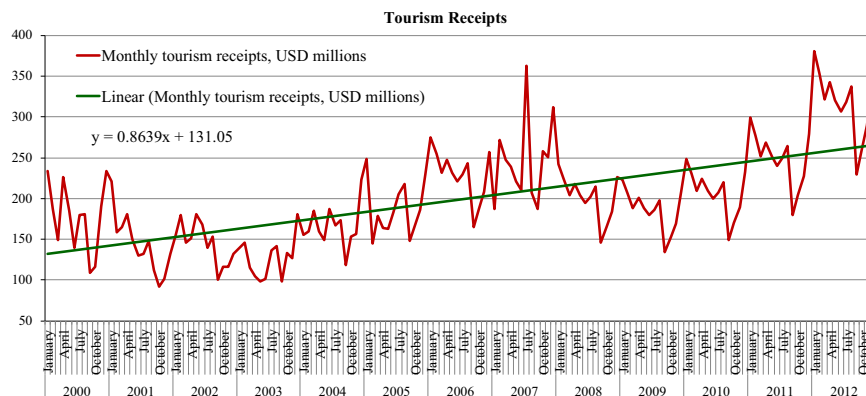

Fig. 1. Monthly tourism receipts, January 2000–December 2012.
Data source: Department of Tourism and the National Statistical Coordination Board-Philippine Statistics Authority.

transport industry, however, the downgrade and ban may have a long-term impact on tourism demand, as business and leisure travelers avoid the country and take their business or vacation elsewhere or travel to the Philippines at a later date when the downgrade and ban are lifted. The long-term impact of the downgrade and ban on international tourism to the Philippines may be moderated by the travel behavior of ethnic Filipinos with foreign citizenships who regularly visit the country and international visitors taking non-Philippine carriers to more international gateways in the country.

$$STAY(t) = \beta_0 + \beta_1 \, FAA \, LONG - TERM(t) + \beta_2$$
$$EU \, BAN \, LONG - TERM(t)$$
$$+\beta_3 \, OECD \, GDP(t) + \beta_4 \, DAILY \, EXPENSES(t) + \beta_5$$
$$EXTERNAL(t) + \varepsilon \tag{6}$$

All variables are as defined in Eqs. (1), (2), (3), (4), and (5).

4. Data and method

We collected and estimated monthly data for all variables in the two sets of equations from January 2000 to December 2012. The monthly tourist arrivals and average length of stay data come from the Department of Tourism (DOT). The monthly tourism receipts from January 2000 to June 2005 and 2007 come from the National Statistical Coordination Board of the Philippine Statistics Authority while the monthly tourism receipts for the periods July 2005 to December 2006 and 2008 to 2012 were estimated using the annual tourism receipts data collected by the DOT and the average monthly tourism receipts indices from 2000 to 2004. The monthly average real exchange rates come from the Bangko Sentral ng Pilipinas. We conducted internet searches for information on the FAA downgrade and EU ban.

Fig. 1 shows the monthly tourism receipts, Fig. 2 the monthly tourist arrivals, and Fig. 3 the monthly average tourist length of stay, including the linear equation of the monthly time series data from January 2000 to December 2012. The trend lines of monthly tourism receipts and tourist arrivals indicate that tourism demand (receipts or arrivals) is generally increasing from 2000 to 2012, in spite of the seasonal (monthly) fluctuation in tourism demand, the substantial decline in tourism receipts from 2001 to 2004 and 2008 to 2010, and the slight decline in tourist arrivals in 2001, 2003, and 2009, while the trend line of tourist length of stay is rather flat or slightly decreasing in the same period (refer to Fig. 3).

The three equations for each system of equations in the empirical framework are estimated simultaneously, for more efficient estimators, using the generalized method of moments (GMM) based on the Newey-West covariance estimator due to the observed autocorrelation and heteroskedasticity in the time series data (Angrist and Pischke, 2009; Cameron and Trivedi, 2009; Greene, 1997; Verbeek, 2000). The Newey-West estimator calculates consistent covariance matrices even when serial correlation and heteroskedasticity are present (Cameron and Trivedi, 2009; Johnston and DiNardo, 1997), while the GMM allows one to drop the assumption of homoskedasticity and apply White's estimator for heteroskedasticity of unknown form (Greene, 1997). The estimation method uses two-stage least squares coefficients with GMM standard errors using an optimal weighting matrix (Cameron and Trivedi, 2009), resulting in robust estimators and standard errors. Moreover, we used the fixed-effects model to estimate the econometric equations to control for any unobserved heterogeneity in the data and because the fixed-effects model yields robust estimators even when a number of time-invariant explanatory variables have not been included in the model (Johnston and DiNardo, 1997).

We used similar instruments in the GMM estimation of the short-term and long-term impact systems of equations such as a vector consisting of tourist arrivals from OECD (North America and Europe) and ASEAN countries, a vector consisting of the GDP growth rates of OECD and ASEAN countries, a vector consisting of the official exchange rates of OECD and ASEAN countries, tourist daily expenditures, tourist length of stay, domestic shocks, and international shocks. We also used dummy variables such as the FAA downgrade long-term impact and the EU ban long-term impact as instruments for the short-term impact system of equations and FAA downgrade short-term impact and the EU ban short-term impact for the long-term impact system of equations.

We used the Sargan Test with a null hypothesis that "the over-identifying restrictions are valid" using the J-statistic, the value of the GMM objective function evaluated at the estimated coefficients multiplied by the sample size, and the chi-square test with m (number of instrumental variables) minus k (number of endogenous variables) degrees of freedom (df) (Hansen, 1982; Sargan, 1958, 1988) and $\alpha = 0.01$. The J-statistic for the short-term impact system of equations is 33.89 while the critical value for the chi-square ($df = 23$, $\alpha = 0.01$) = 40.29, resulting in the non-rejection of the null-hypothesis. The J-statistic for the long-term impact system of equations is 33.30 while the critical value for the chi-square ($df = 17$, $\alpha = 0.01$) = 33.41, resulting in the non-rejection of the null-hypothesis. The results of the Sargan Test for over-identifying restrictions indicate that the instruments used for each
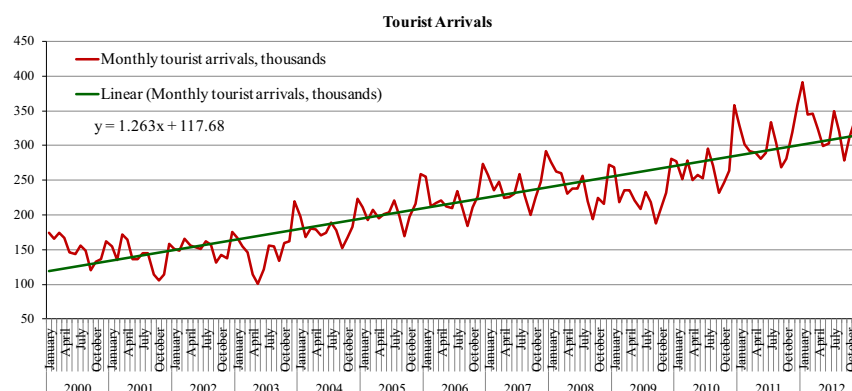

Fig. 2. Monthly tourist arrivals, January 2000–December 2012.
Data source: Department of Tourism and the National Statistical Coordination Board-Philippine Statistics Authority.
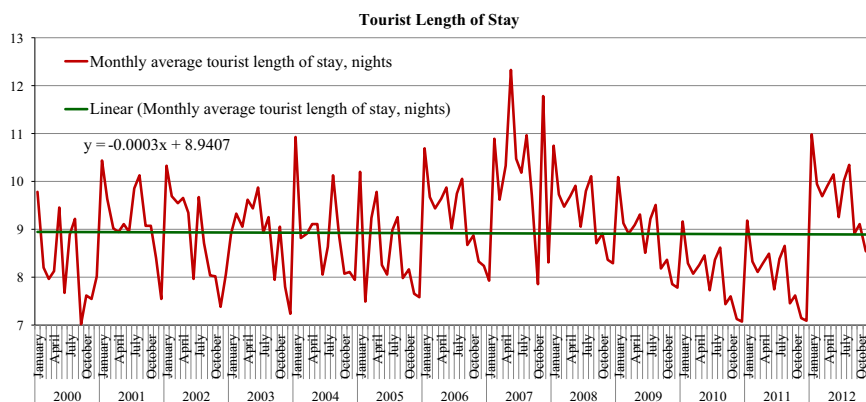
Tourist Length of Stay

Fig. 3. Monthly average tourist length of stay, January 2000–December 2012.
Data source: Department of Tourism and the National Statistical Coordination Board-Philippine Statistics Authority.

system of equations are valid, that model misspecification is not an issue, and that the model is adequately specified, resulting in robust estimates and standard errors (Cameron and Trivedi, 2009).

5. Estimation results and analysis

The estimation results of the short-term impact of the FAA downgrade and EU ban on tourism receipts, tourist arrivals, and length of stay are shown in Tables 1, 5, and 6, respectively. Fig. 4 shows the downward trend in the monthly tourism receipts from January 2007 to March 2011, which includes the periods that correspond to the short-term impact of the downgrade (January–December 2008) and ban (April 2010–March 2011).

The FAA downgrade and EU ban result in USD 28.28 million and USD 13.68 million decrease in monthly tourism receipts, respectively, in the short term (refer to Table 1). These results are not surprising since the DOT reported cancelations of travel to and tours in the Philippines following the downgrade and ban. The downgrade cost the Philippine tourism industry USD 339 million from January to December 2008, representing almost 14% of that year's tourism receipts while the ban cost the tourism industry USD 164 million in the 12 months following the ban (April 2010–March 2011), representing almost 7% of tourism receipts in 2010. The short-term negative impact of the downgrade and ban on tourism receipts corroborates the short-term effect of shocks on Fiji's tourism receipts (Narayan, 2005) as well as the temporary impact of shocks on the Caribbean tourism industry (Browne et al., 2009), indicating that the Philippine Government's failure to comply with international aviation safety standards has a similar

Table 1
Short-term impact of the FAA downgrade and EU ban on tourism receipts.

Variable	Coefficient	Standard Error	t-Statistic
Constant	−204.58	10.80	−18.94***
FAA SHORT-TERM	−28.28	2.45	−11.52***
EU BAN SHORT-TERM	−13.68	3.55	−3.86***
TOURISTS	0.000836	7.38E-06	113.19***
STAY	25.28	1.22	20.78***
INTERNAL	0.121016	2.44	0.05
EXTERNAL	−10.40	2.13	−4.87***
Adjusted R^2			0.78
Included observations			148

Three asterisks (***) indicate significance at the 1% level while without an asterisk is insignificant.

effect. The negative impact of the downgrade and ban on monthly tourism receipts is consistent with the data and trend line indicated in Fig. 4.

Since the short-term impact of the downgrade and ban on tourism receipts is substantial, the Philippines should address the safety concerns in its civil aviation industry in order for international visitors to return and continue traveling to and around the country, which invariably results in higher tourist expenditures.

Table 2 shows the annual tourism demand summary statistics from 2000 to 2012. Tourism receipts recovered from the effects of the September 11, 2001 terrorist attacks in the US and surpassed its 2000 level in 2005, increased annually until 2007, then declined by almost USD 530 million in 2008, the year the FAA downgraded the Philippines' civil aviation system to Category 2, and took four years to recover, indicating that the downgrade and
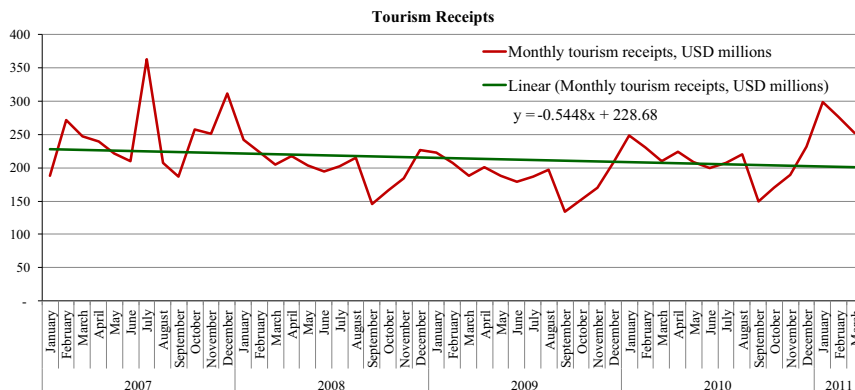
Tourism Receipts

Fig. 4. Monthly tourism receipts, January 2007–March 2011.
Data source: Department of Tourism and the National Statistical Coordination Board-Philippine Statistics Authority.

Table 2
Tourist arrivals, expenditures, and length of stay, 2000–2012.
Data source: Department of Tourism and the National Statistical Coordination Board-Philippine Statistics Authority.

Year	Arrivals (million)	Expenditures (USD million)	Average stay (nights)
2000	1.8238	2,133.80	8.79
2001	1.6778	1,722.70	9.53
2002	1.8315	1,740.06	9.12
2003	1.7890	1,522.68	8.91
2004	2.1638	1,990.81	9.11
2005	2.4710	2,236.05	8.55
2006	2.6677	2,753.12	9.35
2007	2.8754	2,957.08	10.03
2008	2.8893	2,428.68	9.40
2009	2.7493	2,235.92	8.83
2010	3.2314	2,490.23	8.01
2011	3.6471	2,993.97	8.04
2012	4.0083	3,817.76	9.61

Table 3
Monthly tourist arrivals, January 2007–December 2008.
Data source: Department of Tourism and the National Statistical Coordination Board-Philippine Statistics Authority.

| Month and year	Tourist arrivals	Month and year	Tourist arrivals	Change (%)
January 2007	257,580	January 2008	276,099	7.2
February 2007	235,308	February 2008	262,398	11.5
March 2007	247,657	March 2008	260,067	5.0
April 2007	224,422	April 2008	230,964	2.9
May 2007	225,909	May 2008	237,783	5.3
June 2007	230,812	June 2008	238,264	3.2
July 2007	258,410	July 2008	256,661	− 0.7
August 2007	228,651	August 2008	219,945	− 3.8
September 2007	200,377	September 2008	193,958	− 3.2
October 2007	225,956	October 2008	225,017	− 0.4
November 2007	248,096	November 2008	216,017	− 12.9
December 2007	292,202	December 2008	272,136	− 6.9
2007 Total	2,875,380	2008 Total	2,889,309	0.5

Table 4
Monthly tourist arrivals, April 2009–March 2011.
Data source: Department of Tourism and the National Statistical Coordination Board-Philippine Statistics Authority.

Month and year	Tourist arrivals	Month and year	Tourist arrivals	Change
April 2009	235,135	April 2010	249,808	6.2%
May 2009	221,411	May 2010	257,488	16.3%
June 2009	208,204	June 2010	252,279	21.2%
July 2009	233,551	July 2010	295,964	26.7%
August 2009	218,313	August 2010	271,226	24.2%
September 2009	187,965	September 2010	231,323	23.1%
October 2009	209,370	October 2010	246,811	17.9%
November 2009	231,336	November 2010	263,115	13.7%
December 2009	280,833	December 2010	357,511	27.3%
January 2010	276,661	January 2010	328,590	18.8%
February 2010	251,290	February 2010	302,259	20.3%
March 2010	277,878	March 2010	291,957	5.1%
Total	2,831,947	Total	3,348,331	18.2%

ban negatively impact tourist expenditures despite the increasing number of tourists from 2007 to 2012 except in 2009. Length of stay declined from 2008 to 2010 and has not reached its 2007 level by 2012, indicating that the decline in tourism receipts may be partly explained by tourists who are staying shorter in the country.

An additional foreign visitor contributes, on average, USD 836, to tourism receipts per stay while an additional night per visit adds USD 25.28 million to tourism receipts monthly. These results imply that the Philippines should implement visa and tourism-related policies that encourage foreign visitors to continue traveling to the country to increase tourist arrivals and visit multiple sites to increase length of stay, which invariably increase tourism receipts. International shocks such as terrorist attacks, natural disasters, and financial crises tend to reduce tourism receipts as foreign visitors either postpone or cancel their travel plans or cut their trip short. The impact of domestic shocks on tourism receipts is not significant.

Fig. 5 shows the increasing trend in monthly tourist arrivals from January 2007 to March 2011, which includes the periods that correspond to the short-term impact of the FAA downgrade (January–December 2008) and the EU ban (April 2010–March 2011). Overall the downgrade has no noticeable negative impact on tourist arrivals in the short term, notwithstanding the decline in tourist arrivals in the latter half of 2008, since tourist arrivals between January to December 2007 and January to December 2008 (refer to Table 3) slightly increased on an annual basis while the ban has a substantial positive impact on tourist arrivals between April 2009 to March 2010 and April 2010 to March 2011 (refer to Table 4).

The FAA downgrade and EU ban variables have the reverse sign

—both impact tourist arrivals positively in the short term (refer to Table 5), indicating that foreign visitors, business and leisure travelers, ignored the downgrade and ban, resulting in 32,000 and 51,600 more tourists following the downgrade and ban, respectively. This may be due to the difficulty of canceling or modifying travel plans at the last minute or the financial cost associated with trip cancelation or modification, especially for business trips and
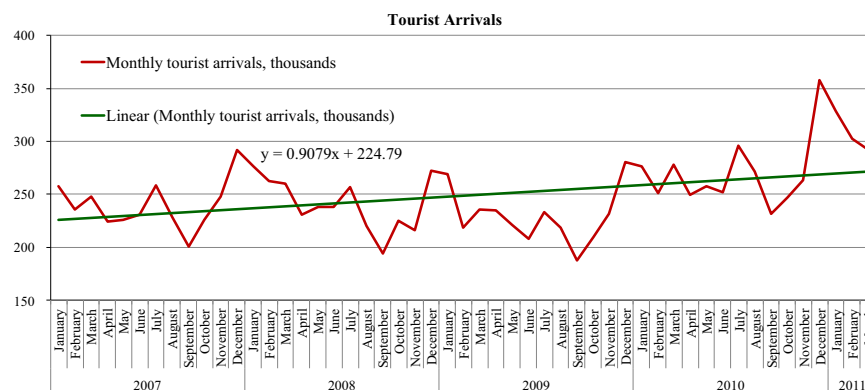
Fig. 5. Monthly tourist arrivals, January 2007–March 2011.
Data source: Department of Tourism and the National Statistical Coordination Board-Philippine Statistics Authority.

Table 5
Short-term impact of the FAA downgrade and EU ban on tourist arrivals.

Variable	Coefficient	Standard error	t-Statistic
Constant	−224137	13966	−16.05***
FAA SHORT-TERM	32000	13817	2.32**
EU BAN SHORT-TERM	51612	5397	9.56***
PHPSGD	14121	455	31.03***
OECD GDP	−2003	659	−3.04***
INTERNAL	4924	4260	1.16
EXTERNAL	−29235	3466	−8.43***
Adjusted R^2			0.42
Included observations			148

Three asterisks (***) indicate significance at the 1% level and two asterisks (**) at the 5% level, while without an asterisk is insignificant.

Table 6
Short-term impact of the FAA downgrade and EU ban on length of stay.

Variable	Coefficient	Standard error	t-Statistic
Constant	9.3122	0.0719	129.55***
FAA SHORT-TERM	0.2468	0.0212	11.67***
EU BAN SHORTTERM	−1.2121	0.0302	−40.12***
OECD GDP	0.0115	0.0073	1.58
DAILY EXPENSES	−0.0020	0.0007	−2.74***
INTERNAL	0.0023	0.0369	0.06
EXTERNAL	−0.1097	0.0175	−6.28***
Adjusted R^2			0.26
Included observations			148

Three asterisks (***) indicate significance at the 1% level while without an asterisk is insignificant.

visits to relatives. As mentioned earlier, the impact of the downgrade and ban on tourist arrivals is moderated by the millions of ethnic Filipinos with foreign passports who travel to the Philippines regularly. The reverse sign may also be due to the absence of major air transport accidents in the Philippines in the year immediately before and following the downgrade and ban, giving foreign visitors the impression that Philippine carriers and the civil aviation industry are relatively safe. The results also indicate the resilience of the tourism industry in the Philippines despite lingering safety concerns on its civil aviation industry by international aviation safety organizations. The absence of a negative impact of the downgrade and ban on tourist arrivals is similar to Thailand's—external shocks are insignificant to tourists' decision to visit and revisit (Kraipornsak, 2011). The reverse sign of the downgrade and ban is consistent with the increasing trend in monthly tourist arrivals in Fig. 5.

The negative impact of the FAA downgrade and EU ban on tourism receipts (refer to Table 1) and their positive impact on tourist arrivals (refer to Table 5) are consistent with the observation of Campos-Soria et al. (2014) that in the short-term, tourists adjust quite readily by spending less during a financial crisis while tourist arrivals continue to increase.

A weaker PHP results in more than 14,000 additional international visitors, underscoring the importance of an effective exchange rate policy to encourage leisure and business travelers to keep visiting the country and stay longer. The GDP growth in OECD countries results in 2,000 fewer visitors, indicating that the Philippines may not be a destination of choice for travelers with rising incomes or high-spending travelers. The impact of domestic shocks on tourist arrivals is not significant. International shocks impact tourist arrivals negatively, however, reducing the number of monthly visitors to the Philippines by more than 29,000, underscoring the vulnerability of the tourism industry to negative

shocks such as terrorist attacks, epidemics, and economic crises.

Fig. 6 shows the decreasing trend in the monthly average length of stay from January 2007 to March 2011, which includes the periods that correspond to the short-term impact of the FAA downgrade (January–December 2008) and the EU ban (April 2010–March 2011).

The impact of the FAA downgrade on length of stay is positive, though small, while the impact of the ban is negative and substantial (refer to Table 6), suggesting that while some foreign visitors may have ignored the downgrade, most visitors considered the ban as serious and cut their trips short. Since length of stay is correlated with the number of destinations tourists visit during their trip (de Oliveira Santos et al., 2014), the results suggest that foreign visitors for the period January to December 2008, which corresponds with the short-term impact of the downgrade, have essentially similar itineraries compared with tourist itineraries in other years since length of stay increased only by a fourth of a night, while the decrease of more than 1.2 nights from April 2010 to March 2011, which corresponds with the ban, suggests that tourists cut their trips short, resulting in less tourism receipts during this period (refer to Fig. 4). The negative impact of the ban on length of stay is consistent with the downward trend in length of stay from January 2007 to March 2011 (refer to Fig. 6), indicating that the ban's negative impact on length of stay overwhelms the slightly positive impact of the downgrade.

Although the expected daily expenses of foreign visitors in the Philippines and international shocks are highly significant and have the correct sign, their impact on length of stay is trivial. The GDP growth of OECD counties and domestic shocks are not significant.

While tourist arrivals did not decline in the short term,
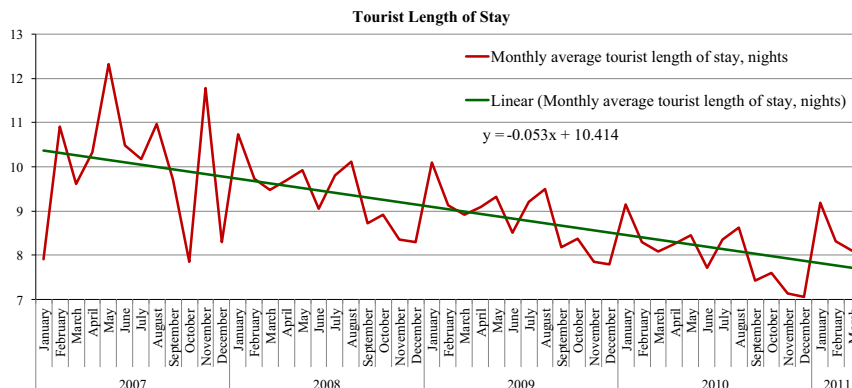
Fig. 6. Monthly average tourist length of stay, January 2007–March 2011.
Data source: Department of Tourism and the National Statistical Coordination Board-Philippine Statistics Authority.
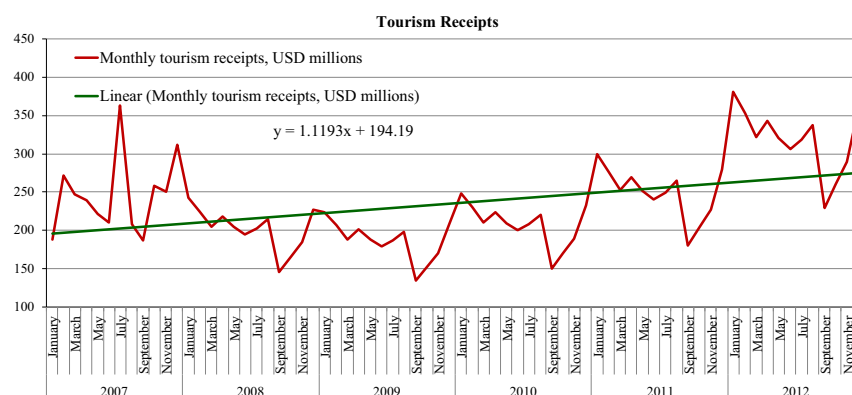
Fig. 7. Monthly tourism receipts, January 2007–December 2012.
Data source: Department of Tourism and the National Statistical Coordination Board-Philippine Statistics Authority.

notwithstanding a 5% decline in 2009, the substantial decline in tourism receipts implies that foreign visitors have been spending less (refer to Fig. 4) and staying shorter following the downgrade and ban (refer to Table 2 and Fig. 6). This may indicate that tourists have shorter itineraries since additional trips within the Philippines entail travel using local airlines and exposure to the "unsafe" civil aviation system and that high-spending tourists, which are arguably more safety conscious than the average traveler, have not returned following the downgrade and ban.

The estimation results of the long-term impact of the FAA downgrade and EU ban on tourism receipts, tourist arrivals, and length of stay are shown in Tables 7, 8, and 9, respectively. Fig. 7 shows the increasing trend in monthly tourism receipts from January 2007 to December 2012, which includes the periods that correspond to the long-term impact of the downgrade (January 2008–December 2008) and ban (April 2010–December 2012).

The FAA downgrade impacts tourism receipts negatively in the long term (refer to Table 7). The downgrade results in USD 37.46 million decline in monthly tourism receipts from January 2008 to December 2012 or a loss of almost USD 450 million annually, representing 16% of the average annual tourism receipts from 2008 to 2012. Table 2 shows that the annual tourism receipts did not return to the pre-downgrade level in 2007 until 2011, at least three years following the downgrade in January 2008. A consequence of the downgrade to Category 2 is the inability of the Philippine Airlines (PAL), the country's flag carrier, to expand its route network in North America, implying that the economic loss due to the downgrade extends beyond the tourism industry.

The long-term impact of the EU ban on tourism receipts is positive, indicating that foreign visitors may have shrugged off the ban due to the lack of fatal airline accidents in the country between 2010 and 2012 and decided to proceed with their travel plans to the Philippines and perhaps even stayed a bit longer, i.e., length of stay started to recover, from its lowest level in November

to December 2010, in January 2011 (refer to Fig. 6), reversing the short-term negative impact of the ban. This result may also indicate the resilience of the tourism industry in the long term in spite of the apparent deficiencies in civil aviation safety standards in the Philippines. The positive impact of the ban on tourism receipts in the long term is consistent with the increasing trend in monthly tourism receipts in Fig. 7.

Fig. 8 shows the increasing trend in monthly tourist arrivals from January 2007 to December 2012, which includes the periods that correspond to the long-term impact of the FAA downgrade (January 2008–December 2012) and EU ban (April 2010–December 2012).

An additional tourist spends USD 962 per stay while extending a visit for just one night results in USD 28.38 million additional tourism receipts per month. Since more tourists and longer stays result in higher tourism receipts, the country should implement more tourist and business friendly policies so that those who visit the country are encouraged to return, spend more, and invest in local businesses up to the legal limit of 40% per business venture. International shocks tend to reduce tourism receipts, underscoring the vulnerability of the tourism industry to unexpected and troublesome events around the world.

The short- and long-term impact of the FAA downgrade and EU ban on tourism receipts have the same adjusted R^2 of 0.78, suggesting that the explanatory variables in both equations (refer to Eqs. (1) and (4) and Tables 1 and 7) adequately explain the variability in tourism receipts compared with the studies examined by Wang and Davidson (2010), which reported R^2 or adjusted R^2 values of below 0.2 and lower than 0.1, respectively.

The FAA downgrade and EU ban have the reverse sign (refer to Table 8), suggesting that tourists and business travelers ignored the safety warnings on the Philippine civil aviation industry and underscoring the positive impact of the millions of ethnic Filipinos with foreign passports who travel to the Philippines oblivious of the downgrade and ban. The results are similar to the short-term impact of the downgrade and ban on tourist arrivals (refer to Table 5) and corroborate the findings of Kraipornsak (2011) on international tourist arrivals in Thailand and the results of Aly and Strazicich (2000) and Browne et al. (2009) that suggest external shocks have a temporary effect in Israel and Egypt and on the Caribbean tourism industry, respectively. The reverse sign of the long-term impact of the downgrade and ban is consistent with the increasing trend in monthly tourist arrivals from January 2007 to December 2012 (refer to Fig. 8).

The real exchange rate and income variables have the correct sign—a weaker PHP and stronger economic growth in OECD countries result in more foreign visitors, underscoring the importance of a favorable exchange rate and increasing incomes.

Table 7
Long-term impact of the FAA downgrade and EU ban on tourism receipts.

Variable	Coefficient	Standard error	t-Statistic
Constant	−253.47	14.96	−16.94***
FAA LONG-TERM	−37.46	2.98	−12.58***
EU BAN LONG-TERM	14.89	3.19	4.67***
TOURISTS	0.000962	1.56E-05	61.61***
STAY	28.38	1.72	16.54***
EXTERNAL	−7.41	2.48	−2.99***
Adjusted R^2			0.78
Included observations			150

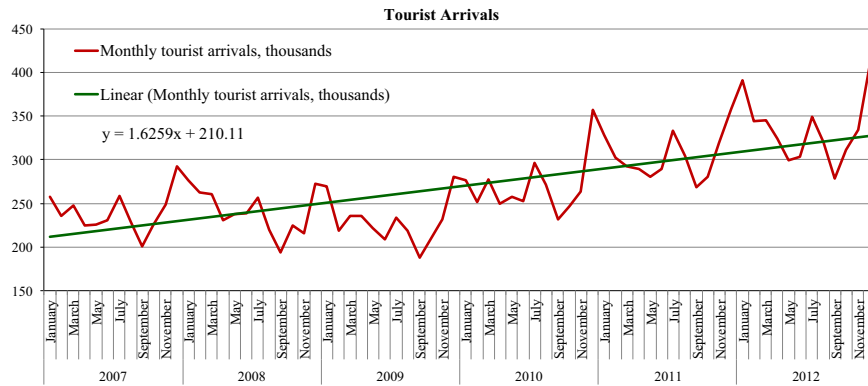Three asterisks (***) indicate significance at the 1% level.

Fig. 8. Monthly tourist arrivals, January 2007–December 2012.
Data source: Department of Tourism and the National Statistical Coordination Board-Philippine Statistics Authority.

Table 8
Long-term impact of the FAA downgrade and EU ban on tourist arrivals.

Variable	Coefficient	Standard Error	t-Statistic
Constant	−41421	17368	−2.38**
FAA LONG-TERM	80618	5483	14.70***
EU BAN LONG-TERM	26946	5264	5.12***
PHPSGD	6677	601	11.12***
OECD GDP	7504	1004	7.48***
EXTERNAL	−13545	3016	−4.49***
Adjusted R^2			0.69
Included observations			150

Three asterisks (***) indicate significance at the 1% level and two asterisks (**) at the 5% level.

Table 9
Long-term impact of the FAA downgrade and EU ban on length of stay.

Variable	Coefficient	Standard Error	t-Statistic
Constant	9.5957	0.0863	111.20***
FAA LONG-TERM	−0.2335	0.1057	−2.21**
EU BAN LONG-TERM	−0.3804	0.0991	−3.84***
OECD GDP	−0.0627	0.0154	−4.06***
DAILY EXPENDITURES	−0.0023	0.0007	−3.20***
EXTERNAL	−0.1878	0.0330	−5.68***
Adjusted R^2			0.19
Included observations			150

Three asterisks (***) indicate significance at the 1% level and two asterisks (**) at the 5% level.

Fig. 9 shows a decreasing trend in the monthly average length of stay from January 2007 to December 2012, which includes the periods that correspond to the long-term impact of the FAA downgrade (January 2008–December 2012) and EU ban (April 2010–December 2012).

The FAA downgrade and EU ban impact length of stay negatively in the long term (refer to Table 9). The average length of stay decreased for three straight years from 2008 to 2010 and only slightly recovered in 2011 (refer to Table 2).The shorter stay partly explains the lower tourism receipts in the same period compared with the 2007 level. The impact of economic growth and expected daily expenditures on length of stay, though positive, is trivial while external shocks tend to impact length of stay negatively. The negative impact of the downgrade and ban on length of stay in the long term is consistent with the decreasing trend in length of stay from January 2007 to December 2012 (refer to Fig. 9).

6. Conclusion and policy implication

This paper has estimated the impact of the Philippine Government's failure to comply with international civil aviation safety standards, resulting in the downgrade of its civil aviation system to Category 2 by the FAA in January 2008 and the EU ban of Philippine carriers from EU skies effective April 2010, on tourist expenditures, arrivals, and length of stay, using monthly time series data for the period January 2000 to December 2012.

The results indicate that the FAA downgrade and EU ban have a negative impact on tourism receipts in the short term while only the downgrade impacts tourism receipts negatively in the long term. Moreover, the downgrade impacts length of stay negatively in the short term while the ban impacts length of stay negatively in the short and long term. This indicates that the damage caused by the downgrade and ban on the Philippine tourism industry is
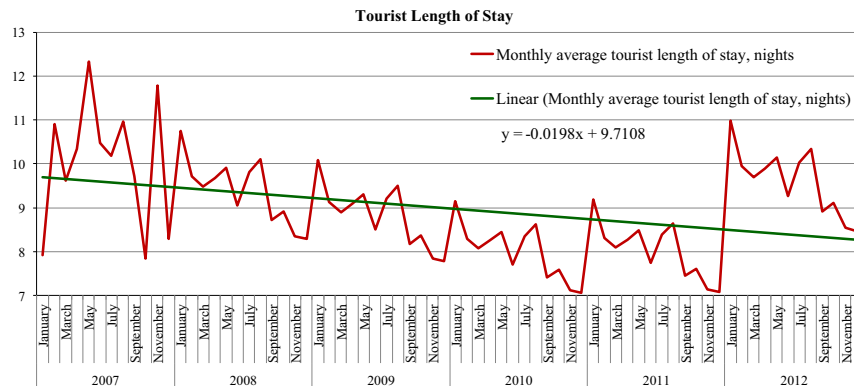

Fig. 9. Monthly average tourist length of stay, January 2008–December 2012.
Data source: Department of Tourism and the National Statistical Coordination Board-Philippine Statistics Authority.

substantial and will have dire consequences on the tourism and air transport industries if the FAA does not reclassify the Philippine civil aviation system to Category 1 and if the EU does not lift its ban.

The FAA downgrade and EU ban have no negative impact on tourist arrivals, either in the short or long term. These results indicate the relative resilience of the Philippine tourism industry from external shocks, although the sizeable ethnic Filipino community who hold foreign citizenships and visit the country regularly may have moderated the impact of the downgrade and ban on tourist arrivals.

While the results indicate that the FAA downgrade does not impact tourist arrivals negatively, its negative short- and long-term impact on tourism receipts suggests that the country's share of high-spending tourists may have decreased following the downgrade. The long-term negative impact of the downgrade on monthly tourism receipts indicates that high-spending tourists have not returned, resulting in average shorter stays. While the Philippines wants tourist arrivals to increase in the long term, the return of high-spending tourists who will stay longer will result in more tourism receipts.

Although the lack of short- and long-term negative impact of the FAA downgrade and EU ban on monthly tourist arrivals in the Philippines may indicate a different perception held by tourists on the safety of the Philippine civil aviation system, benefitting the tourism industry in the Philippines, compared with the perception of regulatory agencies outside the country, the Civil Aviation Authority of the Philippines should nevertheless strive to meet international aviation safety standards so that the FAA can reclassify its civil aviation system to Category 1, allowing PAL to expand its route network and increase its departure frequency between the Philippines and North America, resulting in more tourist arrivals, expenditures, and perhaps longer stays given a civil aviation system deemed safe by international standards.

The lifting of the EU ban may encourage Philippine carriers to serve major European cities where a sizable number of Filipinos live and work, arguably resulting in more tourist arrivals, not only because of the additional flights between these cities and the Philippines, but also due to the improved perception on the safety of the Philippine civil aviation system, which may encourage more foreign visitors to consider the Philippines for their business or leisure trips. The partial lifting of the EU ban on July 2013 allows PAL to commence flights to Europe while the FAA upgrade of the Philippine civil aviation system in April 2014 allows PAL to expand its route network in North America. On November 4, 2013 PAL commenced its five flights per week to London's Heathrow Airport, a major step forward for the Philippine tourism and air transport industries.

Acknowledgment

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